Dr. James Vander Weide
Cost of Capital

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of Petition of WorldCom, Inc. Pursuant to Section 252(e)(5) of the Communications Act for Expedited Preemption of the Jurisdiction of the Virginia State Corporation Commission Regarding Interconnection Disputes with Verizon Virginia Inc., and for Expedited Arbitration	)	CC Docket No. 00-218
In the Matter of Petition of Cox Virginia Telecom, Inc., etc.	)	CC Docket No. 00-249
In the Matter of Petition of AT&T Communications of Virginia Inc., etc.	)	CC Docket No. 00-251

VERIZON VIRGINIA INC.

SURREBUTTAL TESTIMONY OF DR. JAMES VANDER WEIDE

SEPTEMBER 21, 2001

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I. INTRODUCTION
(JDPL Issues II-1-A; II-1-C; II-2-A; II-2-C)

Q. What is your name and business address?

A. My name is James H. Vander Weide. I am Research Professor of Finance and Economics at the Fuqua School of Business of Duke University. I am also President of Financial Strategy Associates, a firm that provides strategic and financial consulting services to clients in the electric, gas, insurance, telecommunications, and water industries. My business address is 3606 Stoneybrook Drive, Durham, North Carolina.

Q. Are you the same James H. Vander Weide that previously filed direct and rebuttal testimonies in this proceeding?

A. Yes, I am.

Q. What is the purpose of your surrebuttal testimony?

A. I have been asked by Verizon Virginia Inc. ("Verizon VA") to review the rebuttal testimony of Mr. John I. Hirshleifer on behalf of AT&T and WorldCom and to comment on his conclusions regarding the appropriate cost of capital input for use in studies of the forward-looking economic cost of providing unbundled network elements ("UNEs") in Virginia. I will explain why Mr. Hirshleifer is wrong about the appropriate cost of capital to be used as an input in the cost studies in this proceeding.

Q. What specific issues in Mr. Hirshleifer's rebuttal testimony will you address?

A. I will address Mr. Hirshleifer's conclusions regarding: (1) the appropriate economic principles for estimating the cost of capital in this proceeding; (2) the risk of providing unbundled network elements in the wholesale market; (3) the best set of risk proxy companies; (4) the appropriate growth assumption in applications of the DCF Model; (5) the correct approach for measuring the cost of debt; and (6) the appropriate capital structure for use in estimating the weighted average cost of capital.

Q. Please summarize the major points of your testimony.

A. The major points of my testimony may be summarized as follows. First, Mr. Hirshleifer's estimate of Verizon VA's cost of capital is inconsistent with this Commission's clear and repeated instruction that UNE prices should simulate the results of a competitive market. In contrast to the Commission's instructions, Mr. Hirshleifer's estimate of Verizon VA's cost of capital relies heavily on his incorrect assumption that Verizon VA provides UNEs in a "low-risk monopoly" environment where no additional capital investments are required to provide UNEs. There is simply no way that UNE prices can simulate the results of a competitive market if they are set using Mr. Hirshleifer's monopoly-based cost of capital.

Second, Mr. Hirshleifer's cost of capital estimate is inconsistent with the underlying assumptions of AT&T/WorldCom's UNE cost model. In marked contrast to Mr. Hirshleifer's "low-risk monopoly" market assumption regarding the cost of capital, his clients AT&T and WorldCom base their estimates of the investment and expense components of their cost model on the assumption that the market for UNEs is competitive. In addition, they base their UNE cost model on the extreme hypothetical assumptions that Verizon VA will: (1) instantaneously construct an entirely new telecommunications network that is perfectly sized to meet the total demand for telecommunications service; (2) use the current most efficient technology throughout its network; and (3) instantaneously reconstruct its network in several years when prices are re-set, again using the most efficient technology then available. Investors would certainly recognize the high risk of investing in a company constructing a telecommunications network under highly unrealistic and hypothetical assumptions of the AT&T/WorldCom model. Investors would also recognize that each time Verizon VA reconstructs its telecommunications network, it faces the considerable risk that its investment may not be recovered. The risk of sunk investment is particularly acute in the AT&T/WorldCom cost model because the costs it produces are not those that any real world carrier could achieve. Mr. Hirshleifer seems to be totally oblivious to the risk implications of his clients' UNE cost model when he estimates the cost of capital. If Mr. Hirshleifer's recommendation were accepted, the resulting UNE rates would send incorrect economic signals to market participants.

Third, Mr. Hirshleifer's "low-risk monopoly" assumption is also inconsistent with the evidence presented in Mr. West's testimony that Verizon VA already faces significant facilities-based competition and that competition is likely to increase rapidly in the future. As Mr. West explains, facilities-based competition will intensify as customers increasingly use Internet and wireless telephony as substitutes for Verizon VA's wireline service and competitors build their own facilities for offering local exchange service.

Fourth, Mr. Hirshleifer's multi-stage DCF model results are completely inconsistent with the fundamental economic principle that required rate of return on an investment should increase with the increasing risk. Contrary to the expected relationship between risk and return, Mr. Hirshleifer's multi-stage DCF model results are higher for companies with low risk and lower for companies with high risk. In particular, Mr. Hirshleifer's multi-stage DCF model results are negatively related to generally accepted measures of risk such as beta, dividend yield, and expected growth. In addition, Mr. Hirshleifer's multi-stage model produces higher expected returns for electric and natural gas utilities than for industrial companies. In contrast, the single stage DCF model produces results that are consistent with the expected relationship between risk and return. Thus, the Commission should accept the reasonable results of the single stage DCF model, not the unreasonable results of Mr. Hirshleifer's multi-stage model.

Fifth, Mr. Hirshleifer's capital structure estimate is inconsistent with the Commission's requirement that the cost of capital input in UNE cost studies be forward looking and market based. Rather than relying on market-based estimates, Mr. Hirshleifer estimates the debt and equity components of the weighted average cost of capital, in part, based on the accounting values of the debt and equity shown on the company's books. Economists unanimously agree that economically meaningful cost of capital estimates must be based on market value percentages of debt and equity, not book value percentages.

In contrast to Mr. Hirshleifer's estimate, my estimate of the cost of capital input for use in Verizon VA's UNE cost studies is consistent with: (1) the Commission's TELRIC guidelines; (2) the assumptions used to estimate the investment and expense components of Verizon VA's UNE cost model; (3) the normal relationship between risk and return; and (4) the financial principle that market prices provide better signals of the amount of debt and equity invested in a company than the amounts shown on a company's books. My cost of capital recommendation in this proceeding is a conservative estimate of the appropriate cost of capital for use in Verizon VA's UNE cost studies.

II. ECONOMIC PRINCIPLES (JDPL Issues II-1-A; II-1-C; II-2-A; II-2-C)

Q. Is Mr. Hirshleifer's testimony consistent with the economic principles set forth by the Commission in its First Report and Order, *In the Matter of Implementation of the Local Competition Provisions in the Telecommunications Act of 1996* ("Local Competition Order")?

A. No. In that order, the Commission decided that three fundamental economic principles should be used to set rates for unbundled network elements. First, the Commission decided that rates for unbundled network elements should be based on forward-looking economic costs, not embedded or accounting costs. Second, the Commission decided that rates for unbundled network elements should approximate the rates the incumbent LEC would be able to charge in a competitive market for unbundled network elements. Third, the Commission decided that rates for unbundled network elements should provide correct economic signals for the investment decisions of both competitive and incumbent local exchange carriers. Mr. Hirshleifer's recommendations are inconsistent with each of these principles.

Q. Do you agree with Mr. Hirshleifer's assertion on page 7 of his rebuttal testimony that your cost of capital is "not a forward-looking economic cost of capital as required for this proceeding?"

A. No. I calculated the forward-looking economic cost of capital using a forward-looking cost of debt, forward-looking cost of equity, and forward-looking capital structure. In doing so, I did not consider Verizon VA's embedded, historical, or accounting costs, nor did I consider Verizon VA's embedded or "book" capital structure. My cost of capital recommendation is consistent with the Commission's fundamental economic principles for setting UNE rates.

Q. Is Mr. Hirshleifer's cost of capital recommendation in this proceeding consistent with the Commission's forward-looking economic cost principle?

A. No. Mr. Hirshleifer's cost of capital recommendation in this proceeding is based in part on the incumbent LECs' book value capital structures, which reflect—contrary to the Commission's guidelines—the embedded, historical, and accounting costs of the incumbent LECs' assets.

Q. Do you agree with Mr. Hirshleifer's statement on page 7 of his rebuttal testimony that "the market does not hypothetically assume that the network element leasing business will immediately become competitive when the real-world evidence indicates that facilities competition exists only to a very limited degree and may take years to develop?"

A. No. First, I disagree with Mr. Hirshleifer's assertion that "real-world evidence indicates that facilities competition exists only to a very limited degree and may take years to develop."[1] Mr. Hirshleifer has provided no evidence to support his assertion, whereas Verizon VA, through the testimony of Mr. West, has provided extensive evidence that facilities-based competition already exists and will develop further in the near future.

Second, I disagree with Mr. Hirshleifer's assertion that the market's assumption about competition in the network element leasing business is relevant in this proceeding. The Commission has clearly stated that UNE rates must "approximate what the incumbent LECs would be able to charge if there were a competitive market for such offerings."[2] This competitive market principle continues to hold whether or not the market believes the network element leasing business is, or soon will be, competitive.

Third, because there are no market-traded companies that are solely in the business of providing UNEs, the market's assumptions regarding competition in the network element leasing business are not revealed in the market price of any currently traded company. Thus, Mr. Hirshleifer's assertion about the market's assumptions regarding competition in the UNE market is not only wrong, but it has little practical relevance in estimating the cost of capital in this proceeding.

1/ Hirshleifer Rebuttal at 7.

2/ First Report and Order, *In the Matter of Implementation of the Local Competition Provisions in the Telecommunications Act of 1996*, 11 FCC Rcd 15499, 15871-72, ¶ 738 (1996) ("Local Competition Order").

Q. Mr. Hirshleifer argues against the assumption that the UNE market is competitive on the grounds that the competitive market assumption is "hypothetical." Have Mr. Hirshleifer's clients, AT&T and WorldCom, made that competitive market assumption when estimating the expense and investment inputs in their UNE cost model?

A. Yes. As discussed on page 14 of my rebuttal testimony, AT&T and WorldCom have consistently supported the competitive market assumption in their testimonies regarding UNE rates throughout the country. Indeed, AT&T and WorldCom continue to explicitly support the view that UNE rates must approximate the rates the incumbent LEC would be able to charge in competitive markets. For example, in her direct testimony for AT&T and WorldCom, Terry L. Murray states,

> First, as is consistent with the Commission's Total Element Long Run Incremental Cost ("TELRIC") methodology, ***the prices for unbundled network elements should mimic the prices that would prevail if Verizon sold the same functionalities in a competitive market.*** Competitive market forces would drive prices down to efficient forward-looking economic costs. Thus, to allow all providers of local exchange service to purchase inputs as if they were doing so in a competitive market, the Commission should establish prices for unbundled network elements that do not exceed forward-looking economic costs.[3/]

In her rebuttal testimony, Ms. Murray states,

> TELRIC is the right methodology because, as this Commission explained when it adopted the TELRIC methodology in its Local Competition First Report and Order [at ¶ 679], "Adopting a pricing methodology based on forward-looking, economic costs best replicates, to the extent possible, the conditions of a competitive market."[4/]

3/ Murray Direct at 5 (emphasis added).

4/ Murray Rebuttal at 5-6.

Thus, both AT&T/WorldCom witness Murray and I cite precisely the same paragraph in the Local Competition Order to support the use of the competitive market assumption.

Q. Do AT&T/WorldCom make any other "hypothetical" assumptions in their cost model?

A. Yes. AT&T and WorldCom also make the hypothetical assumption in their UNE cost studies that Verizon VA must construct an entirely new network from scratch to serve total demand for service using the most efficient currently available technology. As Ms. Murray states in her rebuttal testimony:

> I understand the TELRIC methodology to require that the forward-looking network architecture assumed in cost modeling be the architecture that would result if the incumbent were to build its network anew today, to serve the total quantity of demand for the functionality of all network elements in the most efficient manner possible and using the most efficient technology currently available for purchase.[5/]

Thus, in addition to assuming that the market is instantaneously competitive, AT&T and WorldCom also assume that the incumbent LEC can instantaneously construct an all-new telecommunications network that serves 100% of the demand for service with the most efficient technology currently available. These latter assumptions are hypothetical in the extreme because they ignore the reality that incumbent LECs will develop their telecommunications networks gradually over time in the face of both demand and technological uncertainty. Mr. Hirshleifer's criticisms of "hypothetical" assumptions, therefore, are best levied against his own clients.

[5/] *Id.* at 7.

Q. You have noted that Mr. Hirshleifer disagrees with your assumption that the market for UNEs is competitive, even though his clients make the same assumption. How does Mr. Hirshleifer characterize the UNE leasing business?

A. Mr. Hirshleifer characterizes the network element leasing business as a low-risk business dominated by a monopoly carrier that can provide network elements without any additional capital investment.[6]

Q. Is the monopoly assumption Mr. Hirshleifer uses in estimating the cost of capital consistent with the competitive market assumption his clients use in estimating the investment and expense components of their UNE cost models?

A. No. As noted above, Mr. Hirshleifer's clients, AT&T and WorldCom, estimate the investment and expense components of their UNE cost model under the assumption that the incumbent LEC must build an entirely new telecommunications network in a highly competitive market. In contrast, Mr. Hirshleifer uses his erroneous assumption that the incumbents are monopoly providers of UNEs to justify a significant reduction in his estimated cost of capital. Thus, Mr. Hirshleifer's monopoly assumption with respect to the cost of capital is inconsistent with the competitive market assumption of his clients' cost models. Indeed, because of Mr. Hirshleifer's monopoly assumption, his recommended cost of capital cannot be used in any cost model in this proceeding.

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[6] *See, e.g.*, Hirschleifer Rebutal at 7, 23 and 30.

Q. Does your cost of capital recommendation in this proceeding produce UNE cost estimates that approximate the costs the incumbent LEC would incur in a competitive market for UNEs?

A. Yes. My recommendation is a conservative estimate of the cost of capital required to provide UNEs in a competitive market. It is based on the forward-looking average cost of debt, cost of equity, and market value capital structure of a group of competitive companies of average risk. Taken as a whole, these companies are similar in risk to a company building a telecommunications network for the sole purpose of offering unbundled network elements in a competitive market for UNEs. The business of providing UNEs, however, is actually more risky than the businesses of my proxy group because Verizon VA must make a large sunk investment in the facilities required to provide UNEs, while UNE customers may purchase UNEs on a month-to-month basis and abandon the LECs' network when they build their own facilities. Thus, when used as an input in Verizon VA's cost model, my cost of capital recommendation produces UNE cost estimates that are a conservative approximation of the costs the incumbent LEC would realistically expect to incur in providing UNEs. Unlike Mr. Hirshleifer's cost of capital recommendation, my cost of capital recommendation is consistent with the assumptions used to estimate the other inputs in Verizon VA's cost studies.

However, my cost of capital estimate does not reflect the risks associated with the extreme hypothetical assumptions associated with AT&T/WorldCom's cost model—namely, the risks associated with instantaneously building a new, perfectly-sized, telecommunications network from scratch, using the most efficient technology currently available, and then instantaneously reconstructing this network from scratch several years later with yet another set of technologies. The cost of capital under these extreme hypothetical assumptions would be higher than my recommendation in this proceeding, and certainly higher than Mr. Hirshleifer's recommendation.

Q. Mr. Hirshleifer claims on page 12 of his rebuttal testimony that you rely on a competitive market assumption that "is not only completely inconsistent with the FCC's August 8, 1996 Order, but also inconsistent with the economic cost of capital." Do you agree with Mr. Hirshleifer's statement that the competitive market assumption is "completely inconsistent" with the Commission's Local Competition Order?

A. No. As I note on page 13 of my rebuttal testimony, the Commission's Local Competition Order clearly requires the competitive market assumption. At ¶ 679 and ¶ 738 of the Local Competition Order and at ¶ 42 of the Mass 271 Order, the Commission states:

> Adopting a pricing methodology based on forward-looking, economic costs best replicates, to the extent possible, the conditions of a competitive market.... ***Because a pricing methodology based on forward-looking costs simulates the conditions in a competitive marketplace***, it allows the requesting carrier to produce efficiently and to compete effectively, which should drive retail prices to their competitive levels.[7/]

> In this proceeding, we are establishing pricing rules that should produce rates for monopoly elements and services that ***approximate what the incumbent LECs would be able to charge if there were a competitive market for such offerings***.[8/]

> The Commission equated "efficient entry" with the availability of UNEs at forward-looking economic costs, which ***"replicates...the conditions of a competitive market."*** "Efficient entry" simply means that ***competitors***

[7/] Local Competition Order at ¶ 679 (1996) (emphasis added).

[8/] *Id.* at ¶ 738 (emphasis added).

> ***seeking entry will face the same sorts of costs they would face in a fully competitive market***, that is, TELRIC-based UNE rates.[9/]

Given the Commission's unambiguous statements that TELRIC prices are meant to simulate prices in competitive markets, Mr. Hirshleifer clearly errs when he asserts that my competitive assumption is inconsistent with the Local Competition Order. Furthermore, Mr. Hirshleifer fails to recognize that if my competitive market assumption were inconsistent with the Local Competition Order, then his clients' competitive market assumption would also be inconsistent with the Local Competition Order.

Q. On page 4 of his rebuttal testimony, Mr. Hirshleifer claims that the Commission's statements in ¶ 702 of the Local Competition Order conflict with your statement that the forward-looking economic cost principle requires a competitive market assumption. Do you agree with his contention?

A. No. Paragraph ¶ 702 of the Local Competition Order considers whether the Commission's last authorized 11.25% rate of return can be used as a reasonable starting point for TELRIC calculations. The Commission clearly states that incumbent LECs are likely to face increased risks as a result of competition, but concludes that the 11.25% is still a reasonable starting point (in 1996) because other factors affecting costs, such as interest rates, may have changed as well. The discussion in ¶ 702 does not relate to whether the competitive market assumption must be used in TELRIC studies. Indeed, as I have already noted, the Commission's statements in ¶ 679 and ¶ 738 of the Local Competition Order and ¶ 42 of the Mass 271 Order unambiguously support the

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9/ *Id.* at ¶ 42 (emphasis added).

Commission's view that TELRIC prices must simulate conditions in a competitive marketplace. It would be inconsistent for the Commission to assert in ¶ 702 that one should use Mr. Hirshleifer's monopoly assumption to estimate the cost of capital, when they so strongly state elsewhere that TELRIC prices must simulate conditions in a competitive market.

Q. Has the Commission repudiated Mr. Hirshleifer's interpretation of ¶ 702 of the Local Competition Order?

A. Yes. As I noted in my rebuttal testimony, the Commission rejected Mr. Hirshleifer's interpretation of ¶ 702 in its reply brief filed recently in the TELRIC cases now pending before the Supreme Court, where it states:

> Although the FCC stated that existing determinations provide "a reasonable starting point for TELRIC calculations," *Local Competition Order* (para. 702), J.A.__, the FCC was merely offering tentative guidance at a time when state commissions had to make large numbers of ratemaking determinations under the short time frames established in Section 252. The statement does not alter the governing standard, set forth in the rules, that requires state commissions to determine the true economic depreciation rate and risk-adjusted cost of capital. 47 C.F.R. 51.505(b)(2) and (3). Indeed, the FCC specifically directed state commissions to depart from the previously established depreciation and cost of capital determinations when incumbents show that those determinations do not comply with that standard. *Local Competition Order* (para. 702), J.A. ___.[10/]

[10/] Reply Brief for Petitioners United States and the FCC, *Verizon Communications, Inc. et al. v. FCC et al.* (Nos. 00-551, 00-555, 00-587, 00-590, and 00-602) at 11 - 12.

Q. Does the Commission also reject Mr. Hirshleifer's contention that the cost of capital should be based only on existing competitive risks, not the risks embodied in the economic framework used to regulate UNE rates?

A. Yes. In a footnote to the paragraph quoted above from the Commission reply brief, the Commission states: "Moreover, an appropriate cost of capital determination takes into account not only existing competitive risks...but also risks associated with the regulatory regime to which a firm is subject."[11] Thus, contrary to Mr. Hirshleifer, the Commission explicitly recognizes that, in estimating the cost of capital, one must consider the risks of the economic environment assumed in the regulatory model for setting UNE rates. Specifically, the Commission recognizes that the cost of capital must be considered in the context of the model to which it is applied. If one seeks to model the costs of instantaneously reconstructing Verizon VA's telecommunications network from scratch every few years, using the most efficient technology currently available, then one must also consider the risks inherent in this model in estimating the cost of capital.

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[11] *Id.* at 12 n.8.

Q. If the Commission were to accept Mr. Hirshleifer's view that the cost of capital input in TELRIC cost studies should be based on the assumption that the market for unbundled network elements is monopolistic, would the Commission be able to set rates for unbundled network elements that "approximate what the incumbent LECs would be able to charge if there were a competitive market for such offerings?"

A. No. If the Commission were to use AT&T's aggressive competitive market assumptions to measure the operating expense and investment components of the forward-looking cost of producing UNEs, along with Mr. Hirshleifer's monopolistic assumption in measuring the cost of capital, then it will necessarily set rates for unbundled network elements that would be less than the "rates the incumbent would be able to charge if there were a competitive market for such offerings." At such rates, there would be no incentive for either facilities-based competition or additional investment in the incumbent's network.

Q. Does Mr. Hirshleifer's recommended cost of capital in this proceeding provide correct economic signals for CLECs to become facilities-based providers of telecommunications services?

A. No. Mr. Hirshleifer's cost of capital recommendation is based on his assumption that UNEs are provided in a low-risk market where the incumbent LECs are monopoly providers of UNEs. When Mr. Hirshleifer's monopoly-based cost of capital recommendation is combined with AT&T/WorldCom's competitive-market-based estimates of the expense and investment components of the cost of providing UNEs, the resulting UNE rates will certainly be lower than the costs the competitor would face when building their own facilities. Thus, if UNE rates were based on Mr. Hirshleifer's monopoly cost of capital recommendation, there would be no incentive for CLECs to ever become facilities-based providers of telecommunications services. Under Mr. Hirshleifer's monopoly assumption, the CLECs would always face capital costs in leasing unbundled network elements that are less than the capital costs they would face if they built their own facilities for providing local exchange service.

Q. Does Mr. Hirshleifer's recommended cost of capital in this proceeding provide correct economic signals to incumbent LECs with respect to their decisions to make additional investments in their local exchange networks?

A. No. As noted above, Mr. Hirshleifer's cost of capital recommendation is based on the assumption that the incumbent LEC is the sole provider of UNEs. Mr. Hirshleifer's monopoly cost of capital recommendation, combined with AT&T/WorldCom's aggressive estimates of the investment and expense components of UNE costs, produces UNE cost estimates that are lower than the costs the incumbent LECs would realistically expect to incur in providing UNEs. Thus, Mr. Hirshleifer's recommendation provides no incentive for the incumbent LEC to make additional investments in the local exchange network. As a result, the use of Mr. Hirshleifer's cost of capital estimate would deprive customers of the benefits of new telecommunications services and technologies.

Q. Do you agree with Mr. Hirshleifer's assertion on page 12 of his rebuttal testimony that your assumption of competitive markets is inconsistent with the economic cost of capital?

A. No. Since my cost of capital recommendation approximates the capital costs the incumbent LEC would incur in a competitive market for UNEs, it provides correct economic signals for both competitive and incumbent LECs in making investment decisions. Thus, my cost of capital recommendation is the proper forward-looking economic cost of capital for use in UNE cost studies. Mr. Hirshleifer's cost of capital recommendation, in contrast, provides incorrect economic signals for competitive and incumbent LECs, and thus is inappropriate for use in UNE cost studies.

Q. In summary, Dr. Vander Weide, do you agree with Mr. Hirshleifer's criticism that your cost of capital estimate is inconsistent with the Commission's guidelines for setting UNE rates?

A. No. My cost of capital recommendation comports with the Commission's guidelines that the cost of capital in forward-looking economic cost studies must (1) be forward-looking; (2) reflect the costs the incumbent LEC would incur in a competitive market for unbundled network elements; and (3) provide correct economic signals for new entrants and incumbents. In contrast, Mr. Hirshleifer's cost of capital recommendation is backward looking, reflects the costs a provider would incur in a monopoly market for UNEs, and provides distorted economic signals for new entrants and incumbent LECs. Furthermore, Mr. Hirshleifer's cost of capital recommendation is fundamentally inconsistent with the other inputs in his clients' UNE cost model.

III. RISK
(JDPL Issues II-1-A; II-1-C; II-2-A; II-2-C)

A. RISK IMPLIED BY AT&T/WORLDCOM'S COST MODEL

Q. What is Mr. Hirshleifer's opinion regarding the objective of cost of capital analysis in this proceeding?

A. Mr. Hirshleifer states on page 18 of his testimony:

> A fundamental objective in estimating the cost of capital is choosing the correct target. The most widely-accepted techniques for determining the cost of capital therefore begin with the capital costs experienced by companies with businesses comparable to the line of business under consideration. In this case, therefore, the first step is to identify a group of comparable companies (or proxy group) with characteristics as similar as possible to the wholesale business of leasing unbundled network elements, which is the business for which the cost of capital is being determined.

Q. Does Mr. Hirshleifer recognize anywhere in his direct or rebuttal testimonies that his cost of capital estimate is a key input in AT&T/WorldCom's cost model?

A. No. Mr. Hirshleifer appears to be oblivious to the necessary relationship between his cost of capital estimate and the economic environment assumed in the AT&T/WorldCom cost model. He makes no attempt either to assess the risk of investing in UNE facilities under the AT&T/WorldCom cost model assumptions or to incorporate this risk assessment in his cost of capital estimate.

Q. What assumptions about the economic environment do AT&T and WorldCom use as the foundation of their UNE cost model?

A. As discussed in the rebuttal testimony of Ms. Murray, AT&T and WorldCom purport to estimate the forward-looking economic costs Verizon VA would incur in a competitive market for UNEs. In addition, Ms. Murray notes that AT&T and WorldCom assume that

Verizon VA will instantaneously reconstruct its local exchange network from scratch, using the most efficient technology for meeting the total demand for local exchange service in Virginia.

Q. How does the "wholesale UNE leasing business" envisioned in Mr. Hirshleifer's testimony compare to the UNE leasing business envisioned in the AT&T/WorldCom UNE cost model?

A. As I noted earlier, Mr. Hirshleifer's testimony considers a UNE leasing business that operates in a monopoly environment where the incumbent LEC does not need to make additional investments in network facilities in order to provide UNEs. In sharp contrast, the AT&T/WorldCom UNE cost model considers a UNE leasing business that operates in a fully competitive market where the incumbent LEC must instantaneously construct its local exchange network from scratch, using the most efficient technology for meeting the total demand for service.

Q. What are the risks of constructing a new local exchange network from scratch using the most efficient technology for meeting the total demand for local exchange service in Virginia?

A. A firm building an entirely new local exchange network from scratch would face the risks that: (1) actual demand could be significantly different from forecasted demand; (2) the optimal mix of technology could change as new technology becomes available; (3) the cost of installing and operating the new technology may be greater than expected; and (4) the new technology may not provide the quality and number of services that had been predicted. Furthermore, investors would recognize that the investment required to build an entirely new local exchange network from scratch would be enormous, and the investment would be sunk once the network was installed. If actual demand turns out to be different than forecasted, and/or the optimal technology changes, the company could well go bankrupt. The risks of making such a large investment in fixed network technology is even greater given that customers have the option to abandon their use of UNEs and build their own network facilities at any time. The risks of such an investment would be further increased by the recognition that regulators could be expected to re-set rates every few years, using a new cost model that assumed the network would ***again*** be replaced with the most efficient technology ***then*** currently available.

Q. What are the implications of the conflict between the low-risk monopoly UNE leasing business considered by Mr. Hirshleifer and the highly competitive market UNE leasing business considered in the AT&T/WorldCom UNE cost model?

A. The clear implication of this conflict is that Mr. Hirshleifer has estimated the risk and cost of capital for the wrong business. A necessary requirement of economically meaningful UNE cost models is that the assumptions used to estimate each of the inputs must be consistent. Since Mr. Hirshleifer's cost of capital estimate is used as an input in the AT&T/WorldCom UNE cost model, Mr. Hirshleifer should have estimated the risk and cost of capital for a company constructing an entirely new telecommunications network in a highly competitive market. He should also have recognized that the business being considered in this case would be required to offer its customers the option to discontinue service once they have constructed their own facilities or obtained UNEs from another source, and that rates are likely to be re-set every few years using a new UNE cost model based on the then current, most efficient technology. In contrast, Mr. Hirshleifer erroneously estimated the risk and cost of capital for a UNE leasing business that operates in a monopoly market where the incumbent LEC does not have to make any additional investments in network facilities. As a result, Mr. Hirshleifer's recommended cost of capital cannot be used in his clients' cost model, or in any cost model, in this proceeding.

Q. Has the Commission recognized that the risks of the regulatory environment, including the risk of the UNE cost model, should be considered in estimating the cost of capital?

A. Yes. As noted above, in its reply brief before the Supreme Court, the Commission stated, "Moreover, an appropriate cost of capital determination takes into account not only existing competitive risks...but also risks associated with the regulatory regime to which a firm is subject."[12] Thus, the Commission clearly recognizes that the risks of the economic and regulatory environment assumed in the UNE cost model should be considered in estimating the cost of capital.

Q. Can you identify any publicly-traded companies that operate in a business environment that is relatively similar to the environment assumed in the AT&T/WorldCom cost model?

A. Yes. Companies such as Global Crossing, Level 3 Communications, and Metromedia Fiber have recently constructed national telecommunications networks that they now lease to other telecommunications carriers, governments, and large businesses. Like the

[12] *Id.* at 12 n.8.

firm modeled in the AT&T/WorldCom cost model, these companies have made large sunk investments in telecommunications infrastructure. These companies also face the risk that actual demand may be different from forecasted demand, the optimal mix of technology may change as new technology becomes available, and the cost of installing and operating the new technology may be greater than expected. Unlike the company modeled in the AT&T/WorldCom cost model, Global Crossing, Level 3 Communications, and Metromedia Fiber do not face the regulatory risk that prices will be re-set every several years based on the most efficient technology then currently available. Thus, the risk of investing in these companies is similar to, but less risky than an investment in the company modeled by the AT&T/WorldCom cost model.

Q. If the business of these firms is similar to the business of leasing unbundled network elements, why did you not use these firms to estimate the cost of capital for Verizon's network element leasing business?

A. Although these firms are similar in risk to an investment in the facilities required to provide unbundled network elements, they cannot be used to estimate the cost of capital in this proceeding because they are young companies that do not have sufficient data to apply traditional cost of equity models. For example, the DCF Model requires that companies pay a dividend, and none of these companies currently pays a dividend.

Q. What is the investment community's view of the risk of investing in companies such as Global Crossing, Level 3, and Metromedia?

A. The investment community views companies such as Global Crossing, Level 3, and Metromedia as having well above-average risk. The Value Line betas for these companies, for example, are 1.80, 1.90, 2.10, respectively, where a beta of 1.0 represents average risk, and numbers in the range 1.80 to 2.10 represent extremely high risk. The Value Line Safety Rankings for these companies are also below average, either 4 or 5, where 1 is the least risky and 5 is the most risky.

Q. Are you aware that these companies have experienced financial distress in recent months?

A. Yes. The financial distress experienced by these companies is strong evidence of the high risk of constructing a new telecommunications network under the assumptions of the AT&T/WorldCom cost model.

B. RISK IMPLIED BY ACTUAL COMPETITIVE MARKET CONDITIONS

Q. What are the major factors that affect the risk of investing in the facilities required to provide unbundled network elements in Virginia?

A. The risk of investing in the facilities required to provide unbundled network elements in Virginia depends on operating leverage, the level of competition, rapidly-changing technology, and the regulatory environment.

Q. Please summarize your opinion regarding the risk of investing in the facilities required to provide unbundled network elements in Virginia.

A. The risk of investing in the facilities required to provide unbundled network elements in Virginia is at least as great as the risk of investing in the S&P Industrials. Compared to an investment in the S&P Industrials, an investment in the facilities required to provide unbundled network elements in Virginia experiences high operating leverage, high risk of technological change, and an uncertain regulatory environment. Taken together, these considerations suggest that the S&P Industrials are a conservative proxy for the risk of investing in the facilities required to provide unbundled network elements in Virginia.

Q. Does Mr. Hirshleifer agree with your opinion regarding the risk of investing in the facilities required to provide unbundled network elements in Virginia?

A. No. Mr. Hirshleifer claims that: (1) Verizon does not need to invest in additional facilities to provide unbundled network elements; (2) competition for unbundled network elements is virtually non-existent; (3) the risk of technological change is already included in Verizon's stock price; and (4) regulatory risk is minimal.

Q. Does Mr. Hirshleifer attempt to support his claim that Verizon does not need to invest in additional facilities to provide unbundled network elements in Virginia?

A. Yes. At page 23 of his rebuttal testimony, Mr. Hirshleifer provides a quote from Verizon's 1999 mid-year *Investors' Quarterly* that states that the network element leasing business "provides a unique opportunity to add new revenues onto our platform without significant incremental capital investment . . . ."

Q. Is this quote from Verizon's *Investor Quarterly* relevant to this proceeding?

A. No. The quotation supplied by Mr. Hirshleifer refers to Verizon's embedded investments and expenses, not to its forward-looking investments and expenses. Whether or not Verizon must make a significant incremental capital investment in its existing network to supply unbundled network elements is irrelevant to this proceeding. This proceeding is concerned not with Verizon's existing network, but rather with the forward-looking economic cost of building an entire telecommunications network for the sole purpose of providing unbundled network elements in Virginia. Verizon obviously would have to make a significant capital investment to build a telecommunications network for this purpose.

Q. Do Mr. Hirshleifer's clients, AT&T and WorldCom, agree with Mr. Hirshleifer's assumption that Verizon VA can provide UNEs without making any additional investment in network facilities?

A. No. As noted above, AT&T and WorldCom develop their UNE cost model on the assumption that Verizon VA must construct an entirely new network from scratch to provide UNEs to competitors.

Q. If Verizon were to build a telecommunications network for the sole purpose of providing unbundled network elements in Virginia, would the investment in this network involve high operating leverage?

A. Yes, it would involve very high operating leverage. From an investor's point of view, operating leverage refers to a situation where the fixed costs of operating a business are high relative to variable costs. Investors recognize that telecommunications networks, especially wireline local exchange networks, require high fixed costs relative to variable costs.

Q. Does Verizon's existing telecommunications network also involve high operating leverage?

A. Yes. The fixed costs of Verizon's existing network are high relative to operating costs.

Q. On page 29 of his rebuttal testimony, Mr. Hirshleifer asserts that you seem "to be referring to embedded costs" in your discussion of operating leverage in your direct testimony. Is Mr. Hirshleifer correct?

A. No. I am referring to the operating leverage involved in Verizon VA's forward-looking investment in the telecommunications facilities required to provide unbundled network elements to competitors. This is the scenario required by the Commission's UNE costing rules.

Q. Do you agree with Mr. Hirshleifer's assertion on page 27 of his rebuttal testimony that the risk of technological change can be ignored because it is already included in the stock price of Verizon Communications, Virginia VA's parent?

A. No. The risk of technological change included in Verizon Communication's stock price involves Verizon Communication's total exposure to technological change. As a diversified telecommunications holding company, Verizon Communications has diversified away some of the risk of investing in traditional fixed wireline facilities by also investing in wireless and IP protocol facilities and software. Thus, Verizon Communications faces significantly less risk from technological change than a company building a new wireline local exchange network for the purpose of offering UNEs to competitors.

Q. Do you agree with Mr. Hirshleifer's assertion on page 7 of his rebuttal testimony that competition for unbundled network elements is virtually non-existent in Virginia?

A. No. Mr. Hirshleifer fails to recognize that competitors who offer facilities-based local exchange service are competing with Verizon for the provision of unbundled network elements. In his direct testimony, Mr. West reviewed the extensive evidence of facilities-based competition in Virginia. He further noted the high likelihood that facilities-based competition would be even more prevalent in the near future, as AT&T and other cable providers offer voice services over their CATV networks, and as customers begin to use wireless services as a substitute for wireline local exchange service. Thus, Mr. Hirshleifer's assertion is simply inconsistent with the evidence reviewed in Mr. West's direct testimony.

Q. Is Mr. Hirshleifer correct when he alleges on page 20 of his rebuttal testimony that, in Mr. West's analysis of competition, he "fails to narrow his focus solely to facilities-based competition?"

A. No. Mr. West's testimony focuses very directly on facilities-based competition in Virginia. On pages 4 - 7 of his direct testimony, Mr. West describes in great detail the extent of facilities-based local competition in Virginia. On page 5, for example, Mr. West states,

> In addition, as of the end of May, CLECs had obtained approximately 150,000 facilities-based directory listings, including more than 121,000 for residential customers and more than 29,000 for business customers, including both residential and business listings in every area code in Virginia.

On pages 6 - 7, Mr. West provides extensive evidence on the number of facilities-based access lines served by CLECs in Virginia. Given the clear evidence to the contrary, it is difficult to understand how Mr. Hirshleifer could erroneously claim that Mr. West failed "to narrow his focus solely to facilities-based competition."

Q. Is Mr. Hirshleifer correct when he asserts on page 26 of his rebuttal testimony that Mr. West "is ambiguous on the number of lines provided by CLECs on a facilities basis?"

A. No. In the quote cited above, for example, Mr. West specifically identifies 150,000 facilities-based directory listings in Virginia.

Q. On page 20 of his rebuttal testimony, Mr. Hirshleifer contends that increased competition at the retail level reduces the risk of the wholesale business of leasing unbundled network elements. Do you agree with this assertion?

A. No. Increased competition at the retail level encourages competitors to build their own telecommunications facilities for the purpose of providing local exchange service. Facilities-based competition at the retail level undoubtedly increases the risk that Verizon will lose substantial revenues from the leasing of unbundled network elements. Indeed, the desire to reduce the cost of accessing and leasing the incumbent's network elements is a primary motivation behind the competitor's decision to invest in its own facilities for providing a retail service to customers.

Furthermore, non-facilities-based competition also increases Verizon VA's risk. Although non-facilities-based competitors currently provide retail service by leasing Verizon VA's facilities, there is no requirement that they continue to do so. Indeed, non-facilities-based competitors have the ability to lease Verizon VA's network on a month-to-month basis, while retaining the option to build their own facilities or obtain service from another competitor. Meanwhile, as the carrier of last resort, Verizon VA must continue to invest in a network capable of serving the entire demand for telecommunications service in its service area. In addition, Verizon VA must make investments in the software and facilities that allow competitors to use Verizon VA's network. As a result, Verizon VA faces the considerable risk that it will lose wholesale revenues with limited ability to reduce expenses. Thus, competition at the retail level, whether facilities-based or non-facilities-based, undoubtedly increases the risk of the wholesale business of leasing unbundled network elements.

Q. Does Mr. Hirshleifer attempt to support his claim that increased retail competition reduces the risk of leasing unbundled network elements in the wholesale market?

A. Yes. On page 23 of his rebuttal testimony, Mr. Hirshleifer asserts that "Verizon's own management has expressed this view," citing a statement in the mid-year 1999 *Investor's Quarterly* that the network element leasing business "provides a unique opportunity to add new revenues onto our platform without significant incremental capital investment."

Q. Do you agree with Mr. Hirshleifer's assertion that "Verizon's own management" has expressed the view that increased competition at the retail level reduces the risk of the network element leasing business?

A. No. The statement cited by Mr. Hirshleifer refers to opportunities, not risk. It obviously is in Verizon's best interest to retain as much revenue as possible from its customers. Leasing network elements provides Verizon VA an opportunity to retain some portion of the revenues it would otherwise lose to competitors. However, this circumstance does not imply that Verizon VA faces no risk in providing unbundled network elements to competitors.

In addition, the Commission has determined that rates for unbundled network elements should reflect the forward-looking economic cost of building a telecommunications network for the sole purpose of providing unbundled network elements to competitors. Verizon VA's forward-looking investment in such a network is substantial, and once the network is built, Verizon VA's investment is sunk. There is nothing Verizon VA can do to recover the investment it made to serve customers that switch to an alternate facilities-based provider. Furthermore, Mr. Hirshleifer fails to recognize that competitors retain the option to build their own facilities whenever it becomes more economical to do so.

Finally, Mr. Hirshleifer fails to note that Verizon can never increase its total revenues and profits by leasing network elements to competitors rather than by supplying retail services through its own facilities to its customers.